IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

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| BAKER HUGHES OILFIELD OPERATIONS, INC., AND BAKER HUGHES, INC., PLAINTIFFS, | § | |
| V. | § | CAUSE NO. 1-17-CV-291-LY |
| PRODUCTION TOOL SOLUTION, INC. DEFENDANT. | § | |

**MEMORANDUM OPINION AND ORDER REGARDING CLAIMS CONSTRUCTION**

Before the court in the above-styled and numbered causes are Plaintiffs' Opening Claim Construction Brief filed April 26, 2018 (Doc. #39); Defendant's Opening Claim Construction Brief filed April 26, 2018 (Doc. #40); Plaintiffs' Reply Claim Construction Brief filed May 24, 2018 (Doc. #43); Defendant's Reply Claim Construction Brief filed May 24, 2018 (Doc. #44); the parties' Joint Claim Construction Statement filed March 8, 2018 (Doc. #); and the parties' claim-construction presentations.

The court held a claim-construction hearing on June 15, 2018. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). After considering the patents and their prosecution history, the parties' claim-construction briefs, the applicable law regarding claim construction, and argument of counsel, the court now renders its order with regard to claim construction.

## I. Introduction

On April 5, 2017, Plaintiffs Baker Hughes Oilfield Operations LLC and Baker Hughes, A GE Company, LLC (collectively "Baker Hughes") filed Plaintiff's Original Complaint accusing Defendant Production Tool Solution, Inc. ("PTS") of directly and indirectly infringing United States Patent No. 6,289,990 (the "'990 Patent") through the manufacture, sale, and use of PTS's PCP PAR Valve and ESP PCP Valve. The '990 Patent, entitled "Production Tubing Shunt Valve," is related in general to submersible pumping assemblies and in particular to a valve mounted in production tubing above a pump assembly that allows fluid in the production tubing to flow out of the production tubing above the pump into the annulus when the pump shuts down. The court renders this memorandum opinion and order to construe the claims the '990 Patent.

## II. Legal Principles of Claim Construction

Determining infringement is a two-step process. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 384 (1996) ("[There are] two elements of a simple patent case, construing the patent and determining whether infringement occurred . . . ."). First, the meaning and scope of the relevant claims must be ascertained. *Id.* Second, the properly construed claims must be compared to the accused device. *Id.* Step one, claim construction, is the current issue before the court.

Claim construction is "'exclusively' for 'the court' to determine." *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 835 (2015) (quoting *Markman*, 517 U.S. at 372). The "words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). "[T]he ordinary and customary meaning of a claim

term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention . . . ." *Id.* at 1313. The person of ordinary skill in the art is deemed to have read the claim term in the context of the entire patent. *Id.* Therefore, to ascertain the meaning of a claim, a court must look to the claim, the specification, and the patent's prosecution history. *Id.* at 1314–17; *Markman*, 52 F.3d at 979.

Claim language guides the court's construction of a claim term. *Phillips*, 415 F.3d at 1314. "[T]he context in which a term is used in the asserted claim can be highly instructive." *Id.* Other claims, asserted and unasserted, can provide additional instruction because "terms are normally used consistently throughout the patent . . . ." *Id.* Differences among claims, such as additional limitations in dependent claims, can provide further guidance. *Id.* at 1314–15.

Claims must also be read "in view of the specification, of which they are a part." *Markman*, 52 F.3d at 979. "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics*, 90 F.3d at 1582). In the specification, a patentee may define a term to have a meaning that differs from the meaning that the term would otherwise possess. *Id.* at 1316. In such a case, the patentee's lexicography governs. *Id.* The specification may also reveal a patentee's intent to disavow claim scope. *Id.* Such intention is dispositive of claim construction. *Id.* Although the specification may indicate that a certain embodiment is preferred, a particular embodiment appearing in the specification will not be read into the claim when the claim language is broader than the embodiment. *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

The prosecution history is another tool to supply the proper context for claim construction because it demonstrates how the inventor understood the invention. *Phillips*, 415

F.3d at 1317. A patentee may also serve as his own lexicographer and define a disputed term in prosecuting a patent. *Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004). Similarly, distinguishing the claimed invention over the prior art during prosecution indicates what a claim does not cover. *Spectrum Int'l, Inc. v. Sterilite Corp.*, 164 F.3d 1372, 1378–79 (Fed. Cir. 1988). The doctrine of prosecution disclaimer precludes a patentee from recapturing a specific meaning that was previously disclaimed during prosecution. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003). A disclaimer of claim scope must be clear and unambiguous. *Middleton, Inc. v. 3M Co.*, 311 F.3d 1384, 1388 (Fed. Cir. 2002).

Although "less significant than the intrinsic record in determining the legally operative meaning of claim language," the court may rely on extrinsic evidence to "shed useful light on the relevant art." *Phillips*, 415 F.3d at 1317 (internal quotations omitted). Technical dictionaries and treatises may help the court understand the underlying technology and the manner in which one skilled in the art might use a claim term, but such sources may also provide overly broad definitions or may not be indicative of how a term is used in the patent. *See id.* at 1318. Similarly, expert testimony may aid the court in determining the particular meaning of a term in the pertinent field, but "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms . . . ." *Id.* Extrinsic evidence may be useful when considered in the context of the intrinsic evidence, *id.* at 1319, but it cannot "alter a claim construction dictated by a proper analysis of the intrinsic evidence," *On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1139 (Fed. Cir. 2004).

To the extent the court "make[s] subsidiary factual findings about th[e] extrinsic evidence," the court construes the claims in light of those factual findings. *Teva*, 135 S. Ct. at 841.

## III. Discussion

### *A. Agreed Constructions*

The parties do not agree on the construction of any terms.

### *B. Disputed Terms*

The parties dispute the construction of 21 terms. Each disputed term is discussed separately.

1. "submersible pump assembly"

The parties' proposed constructions of this term, as used in Claims 1, 7, 8, 13, and 14 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| A device and its driver that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid. | A downhole electric motor and a pump separated by a seal section. |

The parties primarily dispute whether the motor of the "submersible pump assembly" must be downhole and electrical. Baker Hughes argues the doctrine of claim differentiation, as well as the specification, prosecution history, and extrinsic evidence, supports its construction. PTS argues its construction is grounded in the specification's description of a "typical submersible pump assembly" and is consistent with a skilled artisan's understanding of the term, as demonstrated by extrinsic evidence. The court agrees with Baker Hughes.

The differences between the use of "submersible pump assembly" in the independent and dependent claims of the '990 Patent suggest that the motor need not be downhole nor electrical.

Claims 7 and 13, which depend from Claims 1 and 8 respectively, recite a well "wherein the submersible pumping assembly comprises: a centrifugal pump driven by a downhole electrical motor." '990 Patent, 4:60–62, 6:1–3. If the "submersible pump assembly" of Claims 1 and 8 necessarily included a "downhole electric motor," as proposed by PTS, then the requirement of such a motor in Claims 7 and 13 would be meaningless. *See Liebel–Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) ("[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim."); *Phillips*, 415 F.3d at 1324 (noting specific limitation in dependent claim "makes it likely that the patentee did not contemplate the term [being construed] already contained that limitation").

PTS argues the doctrine of claim differentiation is not violated by its construction because Claims 7 and 13 would still meaningfully narrow "submersible pump assembly" to a centrifugal pump. However, PTS's argument does not explain why the court should adopt a construction that renders the "downhole electric motor" limitation of Claims 7 and 13 meaningless. On the contrary, "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." *Merck & Co., Inc. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005).

Because the specification primarily describes the "Production Tubing Shunt Valve," it unsurprisingly provides little instruction on the meaning of "submersible pump assembly." In several instances, the specification describes a "typical" submersible pump assembly as including a downhole electric motor and a pump separated by a seal section. '990 Patent, 1:15–16, 2:11–21. Additionally, Figure 1 depicts "a typical electrical submersible pump assembly," which also includes a motor, pump, and seal section. *See id.* fig. 1; 2:11–20. These

statements certainly describe an embodiment of a "submersible pump assembly," as the term is used in the '990 Patent, but are not lexicography or disavowal. Therefore the plain meaning of the term controls. *Hill-Rom Servs. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014); *see also Phillips*, 415 F.3d at 1323 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment."). The most to be gleaned from these descriptions of a "typical" submersible pump assembly is that the term is not always restricted to a downhole electric motor and pump.

The specification does, however, make clear that the "submersible pump" be capable of generating fluid pressure. *See* '990 Patent, 1:39–41 ("Fluid or 'head' generated by operation of the [electrical submersible pump] closes the valve . . . ."); *id.* at 3:7–10 ("When pump 18 begins to operate, fluid pressure generated by pump 18 closes tubing shunt valve . . . ."); *id.* Abstract ("Pump pressure causes the valve case and the valve member to move to the upper positions."). The claims also require that the "submersible pump assembly" be capable of generating pressure. *See, e.g.*, *id.* at 4:19–20 ("pressure exerted by operation of the submersible pump assembly").

Additionally, Baker Hughes argues that because the specification discloses that the pump portion of a submersible pump assembly may be a "progressing cavity pump," which may use a surface mount motor, the term "submersible pump assembly" should not be limited to assemblies with a downhole electric motor. However, Baker Hughes's expert, Dr. William Fleckenstein, belies this point. Fleckenstein testified that there are two conventional methods for operating a progressing cavity pump: using a "gearbox and flex-shaft assembly" to reduce the revolutions per minute ("RPMs") of a downhole electric motor to the appropriate range or using

a "surface-mounted motor assembly capable of turning a rod string running from the surface to the pump at an acceptable pump speed." Therefore, construing "submersible pump assembly" to include the progressing cavity pump embodiment forecloses limiting the term to a downhole electric motor.

Like the specification, the prosecution history of the '990 Patent is of little assistance in construing "submersible pump assembly." However, U.S. Patent No. 6,095,759 (the "'759 Patent," cited as prior art during prosecution of the '990 Patent, suggests the term "submersible pump" requires neither full submersion nor a downhole motor. *See Phillips*, 415 F.3d at 1317 (prosecution history includes prior art cited during patent examination). The '759 Patent, filed less than a year before the '990 Patent, discloses "[a] submersible pump . . . for use in a body of liquid such as a well or sump." The '759 Patent mentions a motor or driver only once, and in that instance suggests the motor is distinct from the pump: "Currently, the oil industry uses a 'tip up' pump with sucker rods and a 50 hp motor." Although this patent is only tangentially related to the '990 Patent, and thus holds little weight in the court's analysis, the '759 Patent nonetheless exemplifies how the same term—here, "pump"—can have multiple, overlapping meanings. The term "pump," both to the layperson and to persons practicing in particular technologies, is often defined by its function: a device capable of delivering or transferring fluid. And although a pump requires some mechanical energy input to perform this function, for example, depressing the handle on a bike pump, a device without this mechanical input is still considered a "pump."

As the '759 Patent demonstrates, a pump, despite the term's functional implications, need not include the source of mechanical energy that allows it to perform that function. This idiosyncrasy appears in the '990 Patent itself. Claim 7, which depends from Claim 1, specifies that "the submersible pumping assembly comprises: a centrifugal pump driven by a downhole

electric motor." '990 Patent, 4:60–62. The claimed "centrifugal pump," is incapable of transferring or delivering fluid without the accompanying "downhole electric motor," yet is a "pump" nonetheless.

In sum, the specification presents no compelling reason to limit "submersible pump assembly" to require a downhole electric motor. Furthermore, the doctrine of claim differentiation and the limited prosecution record explicitly counsels against imposing such a limitation. To the extent PTS relies on expert testimony in support of its construction, the court is unconvinced by that evidence in light of the relevant intrinsic evidence. Therefore, "submersible pump assembly" is given its plain meaning, which, as reflected in the specification, requires only that the "submersible pump assembly" be capable of transferring fluid. *See Hill-Rom Servs, Inc.*, 755 F.3d at 1374–75 ("[D]efining a particular claim term by its function is not improper and 'is not sufficient to [trigger 35 U.S.C. §112(6)].'"). Accordingly, the court concludes the construction of "submersible pump assembly" to be **a device and its driver that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid.**[1]

2. "submersible pump"

The parties' proposed constructions of this term, as used in Claim 18 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| A device that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid. | A downhole electric motor and a pump separated by a seal section. |

[1] Throughout, the **bolded** claim terms indicate the court's adopted construction.

The parties dispute whether "submersible pump" should be given the same meaning as "submersible pump assembly." Baker Hughes argues basic principles of claim differentiation necessitate construing the two terms differently. PTS asserts that despite the difference in the way the '990 Patent uses the terms, intrinsic and extrinsic evidence show that a person of ordinary skill in the art would understand the terms synonymously.

The court finds that the claims use the terms "submersible pump assembly" and "submersible pump" interchangeably. Claims 1-17 of the '990 patent use the term "submersible pump assembly." Claim 18 uses the term "submersible pump." However there is no reason, read in light of the entire claim, for the terms to be interpreted any differently. Indeed Claim 1 of the '990 patent states "a valve housing adapted to be secured to the string of tubing above the submersible pump assembly, the valve housing having an interior adapted to be in communication with fluid in the string of tubing above the valve housing, and a shunt port for communicating the interior of the valve housing with an annulus surrounding the string of tubing. . . ." '990 Patent, 4:1–7. Claim 18 states the exact same language except omits the word "assembly." *Id.* at 6:42–45. Looking at the context of the claims themselves, a plain and ordinary understanding is that the terms have the same meaning.

Turning to the specification, there is no indication that the patentee intended to act as a lexicographer to distinguish the two terms. In fact the specification never even uses the term "submersible pump." The specification, when referring to as Baker Hughes' proposed constructions suggests "a device that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid," uses the term "pump." When referring to "a device and its driver that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid," the specification uses the term

"submersible pump assembly." The term "submersible pump" on its own has no special defined meaning in the language of the '990 patent, and is used interchangeable in the claim language with "submersible pump assembly." Accordingly, the court concludes the construction of "submersible pump" to be **a device and its driver that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid.**

3. "shunt port"

The parties' proposed constructions of this term, as used in Claims 1, 8, 14 and 18 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | An opening that allows fluid to pass through |

Baker Hughes argues "shunt port" requires no construction because its meaning is apparent from the context in which it is used in the claims. PTS argues that "shunt port" is a technical term that a jury would not readily understand, and therefore requires construction. PTS supports its proposed construction with several references to the '990 Patent specification. The court agrees with Baker Hughes.

As a threshold matter, PTS has identified no dispute over claim scope that necessitates construction of the term "shunt port." *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, not an obligatory exercise in redundancy."); *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("[D]istrict courts are not (and should not be) required to construe *every* limitation present in a patent's asserted claims.").

Additionally, the court agrees with Baker Hughes that the meaning of "shunt port" is clear from the context in which the term is used. Claim 1, for example, states that the "shunt port" permits "the interior of the valve housing" to communicate with "an annulus surrounding the string of tubing." '990 Patent, 4:5–7. Claim 1 further specifies that when the shunt valve is in the open position and the tubing access valve is in the closed position, "fluid in the tubing string flow[s] out the shunt port to equalize with fluid in the annulus." *Id.* at 4:25–19. From these descriptions, a person of ordinary skill in the art could readily ascertain the meaning of "shunt port." Therefore, the court concludes that **no construction of the term is necessary**.

4. "shunt valve member slidably and sealingly received within the valve housing for movement between open and closed positions, the shunt valve member closing the shunt port while in the closed position, and while in the open position, opening the shunt port"

The parties' proposed constructions of this term, as used in Claims 1 and 2 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Function: moving between an open position that opens a shunt port and a closed position that closes a shunt port<br><br>Structure: valve cage 44, comprising upper sleeve portion 46 and central support section 58, *i.e.* a two-part structure consisting of an upper sleeve and a lower support structure with a bore hole through its middle. |

The parties dispute whether this term is subject to and governed by 35 U.S.C. § 112(f).[2] Baker Hughes argues the term requires no construction because the term is used consistently with its plain and ordinary meaning, and the term "shunt valve," specifically, connotes sufficient structure to make Section 112(f) inapplicable. PTS contends the term fails to connote specific structure to a person of ordinary skill in the art and, therefore, must be construed under Section 112(f). PTS alternatively argues that if Section 112(f) does not apply, the court should construe the term in accordance with PTS's proposed structure because the specification discloses only a single embodiment. The court agrees with Baker Hughes.

The absence of the word "means" in a claim limitation raises a rebuttable presumption that Section 112(f) does not apply. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc). This presumption can be overcome by showing "the claim term fails to 'recite[] sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Id.* (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). The court concludes that PTS has failed to rebut the presumption that Section 112(f) does not apply.

The "shunt valve member" term connotes sufficient structure to make Section 112(f) inapplicable. Read in its entirety, the limitation requires the "shunt valve member" to be capable of "slidably and sealingly" interfacing with the valve housing. '990 Patent, 4:8–9. Although PTS correctly notes that this phrase describes the location of the shunt valve member, the phrase also conveys structure. The shunt valve member must be a structure capable of sliding within

[2] The America Invents Act replaced Section 112, paragraph 6 with Section 112(f) for all patent applications filed after September 15, 2012. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (codified in scattered sections of 35 U.S.C.). To avoid confusion, the court will refer to subsections consistent with the current version of the statute. Throughout this opinion and order, the court will refer to this provision simply as "Section 112(f)."

and sealing to the valve housing. Furthermore, both parties' experts agree that the phrase "shunt valve" alone connotes definite structure to a person of ordinary skill in the art.

Additionally, the claim requires that the shunt valve member be capable of moving between open and closed positions, and opening and closing the shunt port. Although, this recitation of function appears to be typical means-plus-function language, the function recited—opening and closing a port—is simply the function of any valve. *See, e.g.*, "valve," Random House Dictionary, https://www.dictionary.com/browse/valve, (April 26, 2018) ("any device for halting or controlling the flow of a liquid, gas, or other material through a passage, pipe, inlet, outlet, etc."). Because the word "valve" is commonly defined by its function, the recitation of that function does not automatically trigger Section 112(f). *See Hill-Rom Servs., Inc.*, 755 F.3d at 1374–75 (concluding that construing "datalink" to mean "a link that conveys data" does not trigger Section 112(f) because "many devices take their names from the functions they perform"); *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996) (concluding Section 112(f) is not applicable to "detent mechanism" because "'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms").

PTS argues the Federal Circuit's construction of the term "movable link member" in *Mas-Hamilton Group v. LaGard, Inc.* warrants construing the "shunt valve member" term in accordance with Section 112(f). 156 F.3d 1206, 1215 (Fed. Cir. 1998). PTS's reliance on *Mas-Hamilton* is misplaced. In *Mas-Hamilton*, the circuit affirmed the district court's construction of "movable link member" under Section 112(f) because "there was no evidence [the term] has a well-understood structural meaning in the art" and the remaining claim language did not "provide any structure as necessary to remove th[e] limitation from the ambit of [Section

112(f)]." *Id.* In this case, however, Baker Hughes has demonstrated that a shunt valve does have a "well-understood structural meaning in the art," and the remaining claim language provides some suggestion of structure. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1024 (Fed. Cir. 2006) (affirming district court's conclusion that Section 112(f) was not applicable to "compression member" term because intrinsic and extrinsic evidence demonstrated that "compression member" connoted structure to one of ordinary skill in the art).

The court concludes that PTS has failed to overcome the presumption that the "shunt valve member" limitation is not subject to Section 112(f). Nonetheless, PTS argues the term should be construed to mean "a two-part structure consisting of an upper sleeve and a lower support structure with a bore hole through its middle" because the specification discloses only a single embodiment, and this proposed construction is consistent with that embodiment. PTS's argument runs contrary to the Federal Circuit's warning against limiting claims to the disclosed embodiments. *See Phillips*, 415 F.3d at 1323 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.").

Having concluded that Section 112(f) does not apply and that the "shunt valve member" limitation is used in accordance with the plain and ordinary meaning of a "shunt valve," the court concludes that **no construction of the term is necessary**.

5. "shunt valve member slidably received within the valve housing for movement between upper and lower positions, the shunt valve member blocking communication through the shunt port from the interior of the valve housing to the annulus while in the upper position, and while in the lower position, allowing communication of the interior of the housing with the annulus through the shunt port"

The parties' proposed constructions of this term, as used in Claim 8 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Function: moving between an upper position that closes a shunt port and a lower position that opens a shunt port<br><br>Structure: valve cage 44, comprising upper sleeve portion 46 and central support section 58, *i.e.* a two-part structure consisting of an upper sleeve and a lower support structure with a bore hole through its middle. |

For the reasons set forth in the court's construction of term 4, the court concludes that **no construction of the term is necessary**.

6. "shunt valve member slidably and sealingly received within the valve housing for movement between open and closed positions with the shunt port"

The parties' proposed constructions of this term, as used in Claim 14 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Function: moving between an open position that opens a shunt port and a closed position that closes a shunt port<br><br>Structure: valve cage 44, comprising upper sleeve portion 46 and central support section 58, *i.e.* a two-part structure consisting of an upper sleeve and a lower support structure with a bore hole through its middle. |

For the reasons set forth in the court's construction of term 4, the court concludes that **no construction of the term is necessary**.

7. "tubing access seat"

The parties' proposed constructions of this term, as used in Claims 1, 8, and 14 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | A region contacted by the "tubing access valve member" to close off access to the tubing |

Baker Hughes argues "tubing access seat" requires no construction because a person of ordinary skill in the art would readily understand the term's meaning as it is used in the claims. PTS argues that "tubing access seat" is a technical term that a jury would not readily understand, and therefore requires construction. The court agrees with Baker Hughes.

As a threshold matter, PTS has identified no dispute over claim scope that necessitates construction of the term "tubing access seat." *See U.S. Surgical Corp.*, 103 F.3d at1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, not an obligatory exercise in redundancy."); *O2 Micro Int'l Ltd.*, 521 F.3d at 1362 ("[D]istrict courts are not (and should not be) required to construe *every* limitation present in a patent's asserted claims."). Although PTS argues construction would aid a jury's understanding of the term, the words of a claim are given "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313.

Additionally, the court agrees with Baker Hughes that the meaning of "tubing access seat" is clear from the context in which the term is used. Claim 1, for example, states that the

"tubing access seat" is situated within the valve housing, and "communicate[s] the submersible pump assembly with the string of tubing." '990 Patent, 4:13–15. The specification describes the "tubing access seat" similarly, and indicates no departure from the plain and ordinary meaning of the term. *See id.* at 2:65–3:36 (describing structure and function of valve seat, including "receiv[ing] valve member head 72 in sealing engagement when valve member 68 is in a lower position"); *see also Hill-Rom*, 755 F.3d at 1371 (holding that claim terms should be given plain and ordinary meaning unless patentee acts as own lexicographer or disavows claim scope in specification or prosecution history). From these descriptions, a person of ordinary skill in the art could readily ascertain the meaning of "tubing access seat." Therefore, the court concludes that **no construction of the term is necessary**.

8. "tubing access valve member that moves between a closed position, closing the tubing access seat, and an open position, opening the tubing access seat"

The parties' proposed constructions of this term, as used in Claim 1 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Function: moving between a closed position and an open position<br><br>Structure: valve member shank 68 with valve member head 72 and spring 70 therein; *i.e.* a hollow cylindrical rod or shank with a bulbous head and a spring inside the rod or shank that pushes the rod or shank to a closed position |

The parties dispute whether this term is subject to and governed by Section 112(f). As with the "shunt valve member" term, Baker Hughes argues the term requires no construction

because it is used consistent with the plain and ordinary meaning, and the term "valve" specifically, connotes sufficient structure to make Section 112(f) inapplicable. PTS contends the term fails to connote specific structure to a person of ordinary skill in the art and, therefore, must be construed under Section 112(f). PTS alternatively argues that if Section 112(f) does not apply, the court should construe the term in accordance with PTS's proposed structure because the specification discloses only a single embodiment. The court agrees with Baker Hughes.

The absence of the word "means" in a claim limitation raises a rebuttable presumption that Section 112(f) does not apply. *Williamson*, 792 F.3d at 1348. This presumption can be overcome by showing "the claim term fails to 'recite[] sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Id.* (quoting *Watts*, 232 F.3d at 880). The court concludes that PTS has failed to rebut the presumption that Section 112(f) does not apply.

The "valve member" term connotes sufficient structure to make Section 112(f) inapplicable. The claim requires that the valve member be capable of moving between open and closed positions, and opening and closing tubing access seat. Although, this recitation of function appears to be typical means-plus-function language, the function recited—opening and closing a tube—is simply the function of any valve. *See, e.g.*, "valve," Random House Dictionary, https://www.dictionary.com/browse/valve, (April 26, 2018) ("any device for halting or controlling the flow of a liquid, gas, or other material through a passage, pipe, inlet, outlet, etc."). Because the word "valve" is commonly defined by its function, the recitation of that function does not automatically trigger Section 112(f). *See Hill-Rom Servs., Inc.*, 755 F.3d at 1374–75 (concluding that construing "datalink" to mean "a link that conveys data" does not trigger Section 112(f) because "many devices take their names from the functions they

perform"); *Greenberg*, 91 F.3d at 1583 (concluding Section 112(f) is not applicable to "detent mechanism" because "'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms").

PTS argues the Federal Circuit's construction of the term "movable link member" in *Mas-Hamilton Group v. LaGard, Inc.* warrants construing the "tubing access valve member" term in accordance with Section 112(f). 156 F.3d 1206, 1215 (Fed. Cir. 1998). PTS's reliance on *Mas-Hamilton* is misplaced. In *Mas-Hamilton*, the circuit affirmed the district court's construction of "movable link member" under Section 112(f) because "there was no evidence [the term] has a well-understood structural meaning in the art" and the remaining claim language did not "provide any structure as necessary to remove th[e] limitation from the ambit of [Section 112(f)]." *Id.* In this case, however, Baker Hughes has demonstrated that a "valve memeber" does have a "well-understood structural meaning in the art," and the remaining claim language provides some suggestion of structure. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1024 (Fed. Cir. 2006) (affirming district court's conclusion that Section 112(f) was not applicable to "compression member" term because intrinsic and extrinsic evidence demonstrated that "compression member" connoted structure to one of ordinary skill in the art).

The court concludes that PTS has failed to overcome the presumption that the "tubing access valve member" limitation is not subject to Section 112(f). Nonetheless, PTS argues the term should be construed to mean "a hollow cylindrical rod or shank with a bulbous head and a spring inside the rod or shank that pushes the rod or shank to a closed position" because the specification discloses only a single embodiment, and this proposed construction is consistent with that embodiment. PTS's argument runs contrary to the Federal Circuit's warning against limiting claims to the disclosed embodiments. *See Phillips*, 415 F.3d at 1323 ("[W]e have

expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.").

Having concluded that Section 112(f) does not apply and that the "tubing access valve member" limitation is used in accordance with the plain and ordinary meaning of a "valve," the court concludes that **no construction of the term is necessary**.

9. "tubing access valve member that moves between a lower position, sealingly engaging the tubing access seat, and an upper position, allowing flow from the submersible pump assembly through the tubing access seat"

The parties' proposed constructions of this term, as used in Claim 8 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Function: moving between a lower closed position and an upper open position<br><br>Structure: valve member shank 68 with valve member head 72 and spring 70 therein; *i.e.* a hollow cylindrical rod or shank with a bulbous head and a spring inside the rod or shank that pushes the rod or shank to a closed position |

For the reasons set forth in the court's construction of term 8, the court concludes that **no construction of the term is necessary**.

10. "tubing access valve member that moves between open and closed positions with the tubing access seat"

The parties' proposed constructions of this term, as used in Claim 14 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Function: moving between a closed position and an open position<br><br>Structure: valve member shank 68 with valve member head 72 and spring 70 therein; *i.e.* a hollow cylindrical rod or shank with a bulbous head and a spring inside the rod or shank that pushes the rod or shank to a closed position |

For the reasons set forth in the court's construction of term 8, the court concludes that **no construction of the term is necessary**.

11. "a valve mechanism carried in the valve housing for movement in response to pressure from the pump to an operational position blocking flow through the shunt port then allowing upward flow from the pump through the valve housing, and in response to a lack of pressure from the pump, to a shutdown position allowing outward flow through the shunt port and blocking downward flow into the pump"

The parties' proposed constructions of this term, as used in Claim 18 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | 35 U.S.C. § 112(f) applies<br><br>Functions:<br>(1) moving in response to pressure from the pump (from an initial/shutdown position that does not block flow through the shunt port) to an operational position that blocks flow through a shunt port, in response to pressure from the pump<br>(2) then, moving to allow for upward flow from the pump through the valve housing, in response to pressure from the pump<br>(3) moving (from an operational position that blocks flow through the shunt port) to a shutdown position that allows outward flow through the shunt port, in response to a lack of pressure from the pump<br>(4) moving to block downward flow into the pump, in response to lack of pressure from the pump<br><br>Structure: Valve member valve cage 44, comprising upper sleeve portion 46 and central support section 58, along with valve member shank 68 with valve member head 72 and spring 70 therein; *i.e.*, a two-part structure consisting of an upper sleeve and a lower support structure with a bore hole through its middle; and a hollow cylindrical rod or shank with a bulbous head and a spring inside the rod or shank that pushes the rod or shank to a closed position. |

The parties dispute whether this term is subject to and governed by Section 112(f). As with the "shunt valve member" and "tubing access valve member" terms, Baker Hughes argues the term requires no construction because it term is used consistent with plain and ordinary meaning and term connotes sufficient structure to make Section 112(f) inapplicable. PTS

contends the term fails to connote specific structure to a person of ordinary skill in the art and, therefore, must be construed under Section 112(f). PTS alternatively argues that if Section 112(f) does not apply, the court should construe the term in accordance with PTS's proposed structure because the specification discloses only a single embodiment. The court agrees with Baker Hughes.

The absence of the word "means" in a claim limitation raises a rebuttable presumption that Section 112(f) does not apply. *Williamson*, 792 F.3d at 1348. This presumption can be overcome by showing "the claim term fails to 'recite[] sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" *Id.* (quoting *Watts*, 232 F.3d at 880). The court concludes that PTS has failed to rebut the presumption that Section 112(f) does not apply.

The "valve mechanism" term connotes sufficient structure to make Section 112(f) inapplicable. The claim requires that the valve mechanism be capable of movement to allow upward flow from the pump and movement to block downward flow to the pump and allow outward flow through the shunt port. Although, this recitation of function appears to be typical means-plus-function language, the function recited is simply the function of any valve. *See, e.g.*, "valve," Random House Dictionary, https://www.dictionary.com/browse/valve, (April 26, 2018) ("any device for halting or controlling the flow of a liquid, gas, or other material through a passage, pipe, inlet, outlet, etc."). Because the word "valve" is commonly defined by its function, the recitation of that function does not automatically trigger Section 112(f). *See Hill-Rom Servs., Inc.*, 755 F.3d at 1374–75 (concluding that construing "datalink" to mean "a link that conveys data" does not trigger Section 112(f) because "many devices take their names from the functions they perform"); *Greenberg*, 91 F.3d at 1583 (concluding Section 112(f) is not

applicable to "detent mechanism" because "'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms").

The type of movement is also defined through claim differentiation with Claim 19. "The presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Phillips*, 415 F.3d at 1315. Claim 19 is a dependent claim that requires the apparatus in Claim 18 to move axially in response to pressure from the pump. Applying the cannon of claim differentiation requires that the valve mechanism in Claim 18 to move in a non-axial motion. This provides additional structure to how the "valve mechanism" operates.

PTS argues the Federal Circuit's construction of the term "colorata selection mechanism" in *Massachusetts Inst. of Tech. & Elec. for Imaging, Inc., v Abacus Software.* warrants construing the "valve mechansim" term in accordance with Section 112(f). 432 F.3d 1344, 1354 (Fed. Cir. 2006). PTS's reliance on *Abacus Software* is misplaced. In *Abacus Software*, the Federal Circuit affirmed the district court's construction of "colorata selection mechanism" under Section 112(f) because "the term 'colorata selection,' which modifies 'mechanism' here, is not defined in the specification and has no dictionary definition, and there is no suggestion that it has a generally understood meaning in the art." *Id.* In this case, however, Baker Hughes has demonstrated that a "valve" does have a "well-understood structural meaning in the art," and the remaining claim language provides some suggestion of structure. *See DePuy Spine, Inc.*, 469 F.3d at 1024 (affirming district court's conclusion that Section 112(f) was not applicable to "compression member" term because intrinsic and extrinsic evidence demonstrated that "compression member" connoted structure to one of ordinary skill in the art).

The court concludes that PTS has failed to overcome the presumption that the "valve mechanism" limitation is not subject to Section 112(f). Nonetheless, PTS argues the term should be construed to mean "a two-part structure consisting of an upper sleeve and a lower support structure with a bore hole through its middle; and a hollow cylindrical rod or shank with a bulbous head and a spring inside the rod or shank that pushes the rod or shank to a closed position," because the specification discloses only a single embodiment and this proposed construction is consistent with that embodiment. PTS's argument runs contrary to the Federal Circuit's warning against limiting claims to the disclosed embodiments. *See Phillips*, 415 F.3d at 1323 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.").

Having concluded that Section 112(f) does not apply and that the "tubing access valve member" limitation is used in accordance with the plain and ordinary meaning of a "valve," the court concludes that **no construction of the term is necessary**.

12. "upward flow"

The parties' proposed constructions of this term, as used in Claim 18 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| Flow traveling up-hole toward the surface of a well | Flow in a vertical path to a higher elevation |

The parties dispute the construction of the term "upward flow." Baker Hughes argues that the term should be construed in accordance with references in the specification and expert testimony on what a person of ordinary skill in the art would understand the term to mean. PTS

argues that the ordinary and customary meaning of the term should be applied. The court agrees with Baker Hughes.

Claim terms should be read in light of the specification. "The claims, of course, do not stand alone. Rather, they are part of 'a fully integrated written instrument.'" *Markman*, 52 F.3d at 978. "The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (internal citations omitted). The specification of the '990 patent states that "the pump discharges well fluid up the tubing." '990 Patent, 1:20. Up the tubing is not defined to mean upwards in elevation, but up in relation to the bottom and surface of the well.

In addition to the intrinsic evidence, the court finds the testimony by Dr. Fleckenstein persuasive. In claim construction expert testimony is helpful in determining "that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Phillips*, 415 F.3d at 1318. Dr. Fleckenstein's testimony, which is not contradicted by any other expert, clarifies that in the field of oil and gas upward flow "typically refers to flow from a distal end of a well toward a surface of the well." PTS argues that the customary meaning of "upward" should prevail. However, "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention," not a lay person's understanding of the term. *Id.* at 1313.

Accordingly the court concludes the construction of "upward flow" to be **flow traveling up-hole toward the surface of a well**.

13. "downward flow"

The parties' proposed constructions of this term, as used in Claim 18 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| Flow traveling down-hole away from the surface of a well | Flow in a vertical path to a lower elevation |

The parties dispute the construction of the term "downward flow." Baker Hughes argues that the term should be construed in accordance with references in the specification and expert testimony on what a person of ordinary skill in the art would understand the term to mean. PTS argues that the ordinary and customary meaning of the term should be applied. The court agrees with Baker Hughes.

Claim terms should be read in light of the specification. "The claims, of course, do not stand alone. Rather, they are part of 'a fully integrated written instrument.'" *Markman*, 52 F.3d at 978. "The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at1315 (internal citations omitted). The specification of the '990 patent states that "fluid may flow back down through the tubing and out the intake of the pump." '990 Patent, 1:22. Down the tubing is not defined to mean downwards in elevation, but down in relation to the distance from the pump.

In addition to the intrinsic evidence, the court finds the testimony by Dr. Fleckenstein persuasive. In claim construction expert testimony is helpful in determining "that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." *Phillips*, 415 F.3d at 1318. Dr. Fleckenstein's testimony, which is not

contradicted by any other expert, clarifies that in the field of oil and gas upward flow "typically refers to flow from a distal end of a well toward a surface of the well." The same would apply to the opposite, downward, flow. PTS argues that the customary meaning of "downward" should prevail. However, "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention," not a lay person's understanding of the term. *Id.* at 1313.

Accordingly the court concludes the construction of "upward flow" to be **flow traveling down-hole away the surface of a well**.

14. "pressure exerted by operation of the submersible pump assembly causes the shunt valve member to move to the closed position and the tubing access valve member to move to the open position"

The parties' proposed constructions of this term, as used in Claim 1 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | When the submersible pump assembly is turned on, pressure from the submersible pump assembly causes the shunt valve member to move from an open position (shunt port is open) to a closed position (shunt port is closed) |

Baker Hughes argues this term requires no construction because a person of ordinary skill in the art would readily understand the term's meaning as it is used in the claims. PTS argues that its construction would aid a jury in understanding the claim and that its construction reflects the operation of the shunt valve member disclosed in the specification. The court agrees with Baker Hughes.

As a threshold matter, PTS has identified no dispute over claim scope that necessitates construction of this term. *See U.S. Surgical Corp.*, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, not an obligatory exercise in redundancy."); *O2 Micro Int'l Ltd.*, 521 F.3d at 1362 ("[D]istrict courts are not (and should not be) required to construe *every* limitation present in a patent's asserted claims."). Although PTS argues construction would aid a jury's understanding of the term, the words of a claim are given "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313.

Additionally, the court agrees with Baker Hughes that no construction of this term is necessary. The claim uses no technical terms of unclear scope, and the specification makes no indication that the patentee used this phrase in a unique way or disclaimed its full scope. *See Hill-Rom*, 755 F.3d at 1371 (holding that claim terms should be given plain and ordinary meaning unless patentee acts as own lexicographer or disavows claim scope in specification or prosecution history). Therefore, the court concludes that **no construction of the term is necessary**.

15. "pressure exerted by operation of the submersible pump assembly causes the shunt valve member and the tubing access valve member to move to the upper positions"

The parties' proposed constructions of this term, as used in Claim 8 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | When the submersible pump assembly is turned on, pressure from the submersible pump assembly causes the shunt valve member to move from a lower position (shunt port is open) to an upper position (shunt port is closed) |

For the reasons set forth in the court's construction of term 14, the court concludes that **no construction of the term is necessary**.

16. "operating the submersible pump assembly, resulting in pump fluid pressure that moves the shunt valve member to closed position and the tubing access valve member to the open position"

The parties' proposed constructions of this term, as used in Claim 14 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | When the submersible pump assembly is turned on, fluid pressure from the submersible pump assembly results in the shunt valve member moving from an open position (shunt port is open) to a closed position (shunt port is closed). |

For the reasons set forth in the court's construction of term 14, the court concludes that **no construction of the term is necessary**.

17. "ceasing operation of the submersible pump assembly causes the shunt valve member to move to the open position and the tubing access valve member to move to the closed position"

The parties' proposed constructions of this term, as used in Claim 1 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | Ceasing operation of the submersible pump assembly causes the shunt valve member to move from a closed position (shunt port is closed) to an open position (shunt port is open). |

Baker Hughes argues this term requires no construction because a person of ordinary skill in the art would readily understand the term's meaning as it is used in the claims. PTS argues that its construction would aid a jury in understanding the claim and that its construction reflects the operation of the shunt valve member disclosed in the specification. The court agrees with Baker Hughes.

As a threshold matter, PTS has identified no dispute over claim scope that necessitates construction of this term. *See U.S. Surgical Corp.*, 103 F.3d at 1568 ("Claim construction is a matter of resolution of disputed meanings and technical scope, not an obligatory exercise in redundancy."); *O2 Micro Int'l Ltd.*, 521 F.3d at 1362 ("[D]istrict courts are not (and should not be) required to construe *every* limitation present in a patent's asserted claims."). Although PTS argues construction would aid a jury's understanding of the term, the words of a claim are given "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." *Phillips*, 415 F.3d at 1313.

Additionally, the court agrees with Baker Hughes that no construction of this term is necessary. The claim uses no technical terms of unclear scope, and the specification makes no

indication that the patentee used this phrase in a unique way or disclaimed its full scope. *See Hill-Rom*, 755 F.3d at 1371 (holding that claim terms should be given plain and ordinary meaning unless patentee acts as own lexicographer or disavows claim scope in specification or prosecution history). Therefore, the court concludes that **no construction of the term is necessary**.

18. "ceasing operation of the submersible pump assembly causes the shunt valve member and the tubing access valve member to move to the lower positions"

The parties' proposed constructions of this term, as used in Claim 8 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | Ceasing operation of the submersible pump assembly causes the shunt valve member to move from an upper position (shunt port is closed) to a lower position (shunt port is open) |

For the reasons set forth in the court's construction of term 17, the court concludes that **no construction of the term is necessary**.

19. "ceasing operation of the submersible pump assembly, resulting in a loss of pump fluid pressure that causes the shunt valve member to move to the open position and the tubing access valve member to move to the closed position"

The parties' proposed constructions of this term, as used in Claim 14 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| No construction necessary beyond plain and ordinary meaning | Ceasing operation of the submersible pump assembly results in loss of pump fluid pressure, which causes the shunt valve member to move from a closed position (shunt port is closed) to an open position (shunt port is open). |

For the reasons set forth in the court's construction of term 17, the court concludes that **no construction of the term is necessary.**

20. "In a well having a submersible pump assembly suspended on a string of tubing in a well, the improvement comprising"

The parties' proposed constructions of this term, as used in Claim 8 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| The preamble is not limiting | Preamble is limiting<br><br>Requires a well having a submersible pump assembly suspended on a string of tubing in the well |

Baker Hughes argues that the preamble of Claim 8 of the '990 patent is not limiting because the limitations are duplicative of elements in the body of the claim, and there is no *per se* rule that preambles are limiting in a Jepson claim, where one or more limitations are specifically identified as a point of novelty, distinguishable over at least the contents of the preamble. PTS argues that the preamble of Claim 8 is limiting because it is a Jepson claim and preambles are as a rule limiting in a Jepson claim. There is no established test to determine when a preamble limits the scope of a claim. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). However, the court agrees with PTS.

Claim 8 is written in Jepson form. *See* 37 C.F.R. § 1.75(e) (2009). "When this form is employed, the claim preamble defines not only the context of the claimed invention, but also its scope." *Rowe v. Dror*, 112 F.3d 473, 479 (Fed. Cir. 1997). "Jepson claiming generally indicates intent to use the preamble to define the claimed invention, thereby limiting claim scope." *Catalina Mktg.*, 289 F.3d at 808. Baker Hughes argues that this limitation is rebutted by the presence of the limitations in the claim body. However this is not due to duplicative language, but because the preamble is the antecedent basis for the claim. The preamble contains "*a* submersible pump assembly suspended on *a* string of tubing in *a* well . . . ." '990 Patent, 4:63–64 The claim then claims, as an example, "*the* submersible pump assembly . . . *the* string of tubing . . . ." *Id.* at 4:66-67; 5:1-2. "Dependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention." *Id.* Therefore, this court concludes that **the preamble of Claim 8 is limiting.**

21. "An apparatus for use with a submersible pump comprising:"

The parties' proposed constructions of this term, as used in Claim 18 of the '990 Patent, are listed in the following table:

| Baker Hughes's Proposed Construction | PTS's Proposed Construction |
|---|---|
| The preamble is not limiting | Preamble is limiting<br><br>Claimed apparatus must be made for use with a submersible pump, as defined above. |

Baker Hughes argues that the preamble of Claim 18 of the '990 patent is not limiting because the limitations are duplicative of elements in the body of the claim. PTS argues that the preamble of Claim 18 is limiting because the preamble is necessary to the claim and required by

the invention. There is no established test to determine when a preamble limits the scope of a claim. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). However, the court agrees with Baker Hughes.

"A preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention. *Id.* (citations omitted). In Claim 18, a complete invention is described and the claim preamble describes it's intended use. Additionally, the term pump and submersible pump are found within the claim itself. Reading the preamble as a limitation is unnecessary and duplicative of already present claim limitations. Therefore, the court concludes that **the preamble of Claim 18 is not limiting**.

*C. Summary Table of Agreed and Disputed Terms*

| Term | Court's Construction |
|---|---|
| "submersible pump assembly"<br><br>[Claims 1, 7, 8, 13, 14] | **A device and its driver that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid.** |
| "submersible pump"<br><br>[Claim 18] | **A device and its driver that raises, transfers, or delivers a fluid wherein the device is operable while at least some portion is covered by a fluid.** |
| "shunt port"<br><br>[Claims 1, 8, 14, 18] | **No construction necessary** |
| "shunt valve member slidably and sealingly received within the valve housing for movement between open and closed positions, the shunt valve member closing the shunt port while in the closed position, and while in the open position, opening the shunt port"<br><br>[Claims 1, 2] | **No construction necessary** |
| "shunt valve member slidably received within the valve housing for movement between upper and lower positions, the shunt valve member blocking communication through the shunt port from the interior of the valve housing to the annulus while in the upper position, and while in the lower position, allowing communication of the interior of the housing with the annulus through the shunt port"<br><br>[Claim 8] | **No construction necessary** |

| | |
|---|---|
| "shunt valve member slidably and sealingly received within the valve housing for movement between open and closed positions with the shunt port"<br><br>[Claim 14] | **No construction necessary** |
| "tubing access seat"<br><br>[Claims 1, 8, 14] | **No construction necessary** |
| "tubing access valve member that moves between a closed position, closing the tubing access seat, and an open position, opening the tubing access seat"<br><br>[Claim 1] | **No construction necessary** |
| "tubing access valve member that moves between a lower position, sealingly engaging the tubing access seat, and an upper position, allowing flow from the submersible pump assembly through the tubing access seat"<br><br>[Claim 8] | **No construction necessary** |
| "tubing access valve member that moves between open and closed positions with the tubing access seat"<br><br>[Claim 14] | **No construction necessary** |
| "a valve mechanism carried in the valve housing for movement in response to pressure from the pump to an operational position blocking flow through the shunt port then allowing upward flow from the pump through the valve housing, and in response to a lack of pressure from the pump, to a shutdown position allowing outward flow through the shunt port and blocking downward flow into the pump"<br><br>[Claim 18] | **No construction necessary** |

| | |
|---|---|
| "upward flow"<br><br>[Claim 18] | **Flow traveling up-hole toward the surface of a well** |
| "downward flow"<br><br>[Claim 18] | **Flow traveling down-hole away from the surface of a well** |
| "pressure exerted by operation of the submersible pump assembly causes the shunt valve member to move to the closed position and the tubing access valve member to move to the open position"<br><br>[Claim 1] | **No construction necessary** |
| "pressure exerted by operation of the submersible pump assembly causes the shunt valve member and the tubing access valve member to move to the upper positions"<br><br>[Claim 8] | **No construction necessary** |
| "operating the submersible pump assembly, resulting in pump fluid pressure that moves the shunt valve member to closed position and the tubing access valve member to the open position"<br><br>[Claim 14] | **No construction necessary** |
| "ceasing operation of the submersible pump assembly causes the shunt valve member to move to the open position and the tubing access valve member to move to the closed position<br><br>[Claim 1] | **No construction necessary** |

| | |
|---|---|
| "ceasing operation of the submersible pump assembly causes the shunt valve member and the tubing access valve member to move to the lower positions"<br><br>[Claim 8] | **No construction necessary** |
| "ceasing operation of the submersible pump assembly, resulting in a loss of pump fluid pressure that causes the shunt valve member to move to the open position and the tubing access valve member to move to the closed position"<br><br>[Claim 14] | **No construction necessary** |
| "In a well having a submersible pump assembly suspended on a string of tubing in a well, the improvement comprising"<br><br>[Claim 8] | **The preamble of Claim 8 is limiting** |
| "An apparatus for use with a submersible pump comprising:"<br><br>[Claim 18] | **The preamble of Claim 18 is not limiting** |

## IV. Conclusion

For the above reasons, the court construes the disputed claims as noted and so **ORDERS**. No other claim terms require construction.

**IT IS FURTHER ORDERED** that this case is set for a **Scheduling Conference** on **June 11, 2020, at 11:00 a.m.**, in Courtroom 7, Seventh Floor, United States Courthouse, 501 W. 5th Street, Austin, Texas 78701. The parties shall meet and confer in advance of that date in an attempt to settle this case. If the case is not settled, the parties shall confer in an attempt to reach agreement on a schedule to follow for the remainder of this case. The court will render a Scheduling Order as a result of the June 11 conference.

SIGNED this 17th day of April, 2020.

LEE YEAKEL
UNITED STATES DISTRICT JUDGE